

Polytec UV 2181 ME

Properties

Polytec UV 2181 ME is a 100% solid, single component, medium viscosity, thixotropic, UV-/Visible light curable adhesive for medical applications according to DIN EN ISO 10993-5.

It will cure in seconds when exposed to low UV intensity (60mW/cm²). After cure the product is clear, exceptional flexible and ductile.

Polytec UV 2181 ME has an excellent adhesion to glass, metals and most plastics. It is recommended for applications where good impact strength, flexibility and a thermal shock resistance is desirable. It is also possible to bond thermoplastics like PC, PMMA, SAN, ABS, PVC -and with pretreatment - PS, PP, PE, PET and PA as well.

Polytec UV 2181 ME is an adhesive, sealant and encapsulant for Medical devices.



Processing

- Polytec UV adhesives are single-component products which cure rapidly under exposure to UV or visible light. They should not be exposed to light before application.
- Polytec UV adhesives come ready to use and can be applied directly from the respective packaging.
- Been refrigerated products should be brought to room temperature prior to processing.
- The curing time depends on a number of factors such as type and intensity of the light source, working distance for UV lamp, adhesive layer thickness and UV transmittance of the substrate.
- Air oxygen may inhibit the curing of the material at the surface. Surfaces associated with air during the hardening should be cured with higher intensity or by using an inert gas (e.g. nitrogen) to obtain a dry surface. Please take notice of respective minimum curing temperature and time.
- Substrates should be free of dirt, grease, oil or any flux residues.
- For Safety information please refer to the respective Material Safety Data Sheet.

Polytec UV 2181 ME

UV light curing acrylate adhesive

Technical Data

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Properties in uncured state	Method	Unit	Technical Data
Chemical basis	-	-	Acrylate
No. of components	-	-	1
Storage Stability at 23°C	TM 701	months	6
Consistency	TM 101	-	Medium viscosity
Density Mix	TM 201.2	g/cm ³	1.05
Viscosity Mix 10 s ⁻¹ at 23°C	TM 202	mPa·s	4 500

Properties in cured* state	Method	Unit	Technical Data
Color	TM 101	-	Transparent
Hardness (Shore A after UV-curing)	DIN EN ISO 868	-	70
Temperature resistance continuous	TM 302	°C	-40 / +80
Temperature resistance short term	TM 302	°C	-
Degradation Temperature	TM 302	°C	-
Glass Transition Temperature (T _g)	TM 501	°C	-
Coefficient of thermal expansion (<T _g)	ISO 11359-2	ppm	-
Coefficient of thermal expansion (>T _g)	ISO 11359-2	ppm	-
Elasticity modulus	DIN 527-1	N/mm ²	-
Tensile Strength	DIN 53455	N/mm ²	-
Lap shear strength (PC/PC) (PC/ABS) (PC/PVC)	DIN 53283	N/mm ²	5.3 6.4 5.9
Elongation at break	TM 605	%	-
Water absorption 24 h, 23°C	TM 301	%	-
Refractive Index @λ=633nm	-	-	1.5051

*The above data has been determined with samples cured by UV-light. Please notice, by varying the curing temperature these properties can be influenced to some extend.

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Curing*	Method	Unit	Technical Data
Emission spectrum		nm	320 – 500
Maximum		nm	350 - 420
Curing time at 0.01 mm thickness	LED 395 nm	s	ca. 5

*Curing temperatures refer to the UV-light intensity in the respective bond line. When choosing the respective curing conditions, the thickness and the substrates permeability towards UV-light has to be considered.

Standard pack sizes:

30cc* / 30g, 32oz***/950g

Customized Packaging

*: EFD-Cartridges, **: Bottles, ***: Semco-Cartridges

Please note:

The above listed information are typical data based on tests and are believed to be accurate. Polytec PT makes no warranties (expressed or implied) as to their accuracy. The above listed data do not constitute specifications. The processing (in particular the cure conditions) of the material, the process control and the variety of different applications at various customers are not under Polytec PT's control. Therefore Polytec PT will not be liable for concrete results in any specific application or in any connection with the use of this product. In particular the cure conditions do have a major effect on the properties of the cured material. Therefore it is highly recommended to keep the cure schedule – once established - under tight control. With the release of this data sheet all former data sheets will be null and void.

Subject to alteration.

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